

REMARKS

Claim 1 was previously pending in this application. By this amendment, the Applicant has canceled claim 1 without prejudice or disclaimer. New claims 2-21 have been added, with claims 2 and 12 being independent claims.

In a parent application Ser. No. 09/944,523, an Office Action (mailed August 14, 2002) rejected some of the then pending claims under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,095,204 to Novini (hereinafter Novini). Additionally, the Office Action rejected claims under 35 U.S.C. §103(a) as allegedly being unpatentable over Novini in view of U.S. Patent No. 5,300,788 to Fan (hereinafter Fan). The following remarks discuss the patentability of the claims pending in the present continuation application over the references cited in the Office Action from the parent application. Specifically, the Applicants believe that all presently pending claims are patentable over Novini and/or Fan as set forth below.

Novini is directed to an optical system for inspecting the bottom surfaces of containers (abstract). In particular, Novini's optical system identifies a baffle mark in an image of a bottom surface of a container and removes the baffle mark from the image memory prior to evaluation of the image, and thereby improves the ability of the system to detect defects in the container (abstract).

Regarding lighting systems for use with the optical system, Novini states that there are two important aspects of lighting systems, namely the type of source and the physical arrangement of the source in relation to the part under inspection (col. 4, lines 7-8). Novini states that the light source is preferably an array of LEDs (col. 8, line 45-48). Novini states that the physical arrangement to be used is a backlighting arrangement (col. 8, line 8-9). Novini discloses that the light source may be strobed to "freeze" an object to be imaged (col. 8, line 50-53). Novini states that it desirable to have highly uniform illumination of the bottom surface of the container (col. 8, lines 44-45). Novini is primarily directed to image analysis of images of bottom surfaces, and few additional details of lighting systems are provided. Novini does not disclose the use of LEDs to produce different spectra of radiation, for example, different perceivable colors.

On page 2, the Office Action (in the parent) mailed August 14, 2002 refers to col. 10, line 20 and col. 8, lines 62-63 of Novini as allegedly disclosing modulation of light by changing the

intensity of the light via processor 52. The Applicants respectfully maintain that said portions of Novini are directed instead to output signals from a camera, not control signals for an illumination source.

On page 4, the Office Action mailed August 14, 2002 refers to col. 9, line 38 as allegedly disclosing a command signal capable of pulse amplitude modulation of a lighting system. The Applicants respectfully maintain that said portion of Novini is directed instead to output signals from a camera, not control signals for an illumination source.

Present Claims vis-à-vis Novini (U.S. Pat. No. 5,095,204)

The presently pending claims include two independent claims, namely claims 2 and 12. Claim 2 as pending in the present continuation application recites, *inter alia*, an apparatus comprising A) a lighting system adapted to produce light, the lighting system comprising: i) a first light source adapted to produce a first light component having a first spectrum; and ii) a second light source adapted to produce a second light component having a second spectrum, the first spectrum being different than the second spectrum. Claim 12 recites, *inter alia*, a method comprising: illuminating [an] object with a first light having a first spectrum; and illuminating the object with a second light having a second spectrum, the first spectrum being different than the second spectrum. Novini does not disclose or suggest an apparatus comprising a first light source and a second light source having respectively different spectra (e.g., LEDs of multiple colors), nor a method comprising a step of illuminating an object with first light having a first spectrum and second light having a second spectrum, the first spectrum being different than the second spectrum. Accordingly, claims 2 and 12 in the present application patentably distinguish over Novini. The remaining claims depend from one of claims 2 and 12 and are patentable for at least the same reasons.

Present Claims vis-à-vis Novini in view of Fan (U.S. Pat. No. 5,300,785)

Fan is directed to LEDs formed of selected materials and selected arrangements (abstract). At most, Fan discloses that arrays of LEDs can include LEDs of different colors, and that the arrays can be used as displays (see FIGs. 19 and 20). However, Fan does not discuss

specific applications of such LEDs for illumination, much less illumination for machine vision applications.


As stated above, Novini does not disclose or suggest the use of LEDs of multiple colors. Neither Novini nor Fan suggests that a device such as disclosed in Novini should be modified to include LEDs of different colors. In fact, a device having multiple color LEDs, as disclosed in Fan, is incompatible with Novini's desire to use "highly uniform illumination." Accordingly, there is no motivation to combine Novini and Fan in the manner suggested in the Office Action; moreover, Novini teaches away from any such combination. Therefore, any rejection based on a combination of Novini and Fan is improper.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicants' attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,
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